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EXAMINER

TRAN, PHUC H

ART UNIT PAPER NUMBER

2668

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,029

Applicant(s)

SHARMA ET AL.

Examiner

PHUC H. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 10, 15, 16 and 18-32 is/are rejected.
7) ☒ Claim(s) 4-9, 11-14 and 17 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 10, 15-16, and 18-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchini, Jr. (U.S. Patent No. 6842422 B1) in view of Proctor et al. (U.S. Patent No. 5030232).

- With respect to claim 1, 3, 16, 20-24, and 27-32, Bianchini, Jr. teaches a method of routing data packets of a plurality of data flows in a stream (block 14 in Fig. 4), carried on a transmission media operating at a first data rate, through a switching system parallel switching pathways operating at a second data rate (block 18, 20 in Fig. 4), the method comprising the steps of:

assigning a first data flow in the stream to a first switching path comprised of a first switching path corresponding first switching fabric (Fig. 4 shows flows from input stage to central super switch);

after the step of assigning a first data flow, routing to the first switching path, data packets of at least the first data flow;

upon the determination of a first condition (col. 3, lines 38-42), assigning at least some of the data packets of the first data flow to a second switching path (Fig. 4),

Bianchini Jr. fails to teaches a first data buffer and second data buffer couple to a switch fabric. Proctor teaches the data buffer (block 54, and 204 in Fig. 4) for control data to the switch. The data buffers can be utilized at the blocs 18 of Bianchini Jr. for controlling data before coming to the switch. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the buffers of Proctor's invention into Bianchini Jr. for controlling data flows in the switching fabrics and reducing a congestion and the system.

- With respect to claim 2, Bianchini Jr. a method of routing data packets of a plurality of data flows in a stream (block 14 in Fig. 4), carried on a transmission media operating at a first data rate, through a switching system, parallel switching pathways, each switching pathway comprised of an input data buffer that receives data packets from the transmission media via a demultiplexing operation each input buffer coupling data into at least one associated switching fabric (see Fig. 4), the method comprising the steps of:

assigning a first data flow to a first switching pathway (e.g. A to fabric 1 in Fig. 4);

assigning a second data flow to the first switching pathway (e.g. Fig. 5)

routing to the first switching pathway, data packets, of at least the first data flow and the second data flow (e.g. flows in Fig. 4)

upon the determination of a first condition (col. 3, lines 38-42), assigning at least some of the subsequent data packets of the second data flow the stream to a second switching fabric (block 26 in Fig. 4);

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routing the at least some data packets of the second data flow to the second switching fabric (block 26 in Fig. 4 teaches the flow from fabric is rerouted to new fabric).

- With respect to claim 10, Bianchini Jr. fails to teach the step of delaying the output of at least some of the data from the second buffer into a second switch fabric until the occurrence of a second condition. Proctor teaches the delaying of at least some data from the buffer (col. 2, lines 40-55) for controlling data flow in the transmission. It can be implemented the step of delaying into Bianchini Jr. by implementing the delaying step at the out buffer for controlling data flow. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the step of delay for controlling the flow in the system.

- With respect to claim 15, Bianchini Jr. wherein the second switching pathway is a fault recovery switching pathway (e.g. the spare fabric in Fig. 4).

- With respect to claim 19, Bianchini Jr. wherein the demultiplexor is a demultiplexor which re-routes at least some of the data packets of the stream from a first data buffer to a second data buffer on the occurrence of a predetermined event (e.g. show in Fig. 4).

- With respect to claims 18, & 25-26, Bianchini Jr. teaches a data switch comprising:

an input port receiving a stream of data flows (block 14 in Fig. 4)

a data flow demultiplexor, having an input coupled to the input port so as to receive the stream and further having K outputs and a control input, the data flow

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demultiplexor routing data packets of the data flows to different ones of the K data outputs (block 16 in Fig. 4);

K switch matrices, each matrix having K inputs and at least one output, each of the K inputs of each matrix coupled to a respective one of the K outputs of the buffers (block 20 in Fig. 4);

a controller, operatively coupled to the data demultiplexor (it inherently knows that the system has a controller to operate the system);

wherein data packets of a first flow of the stream S are routed by the data flow demultiplexor to a first switch matrix, and upon the detection of a predetermined event by the controller, at least a portion of the first flow is re-routed to a second switch matrix (col. 3, lines 38-42).

Bianchini Jr. fails to teaches data buffer couple to a switch fabric. Proctor teaches the data buffer (block 54, and 204 in Fig. 4) for control data to the switch. The data buffers can be utilized at the blocs 18 of Bianchini Jr. for controlling data before coming to the switch. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the buffers of Proctor's invention into Bianchini Jr. for controlling data flows in the switching fabrics and reducing a congestion and the system.

Allowable Subject Matter

3. Claims 4-9,11-14, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 10/27/2005 have been fully considered but they are not persuasive.

- In response to Applicant argument that "the data flow thereto is merely reconstructed from a parity strip of data and the data flow to the failed switch fabric is not reassigned to another switching fabric" in page 21. Examiner respectfully disagrees. In col. 3, lines 38-42 of Bianchini teaches "if 1 of the N switch fabrics fail, the data stream can still be reconstructed with the parity stripe on the first transmit interface", therefore reconstructed means reallocation, reassignment...etc.

- In response to Applicant argument that "Examiner has not shown that the conditions specified in Claim 3 are shown by the patents (in page 21). Examiner respectfully disagrees. In Claim 3, the first condition need only meet at least one of following conditions; therefore one condition should be met.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUC H. TRAN whose telephone number is (571) 272-3172. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phuc Tran
Assistant Examiner
Art Unit 2664

P.t
1/21/06

DANG TON
PRIMARY EXAMINER